

SEMICONDUCTOR LIGHT EMITTING DEVICES

Nathan F. Gardner

Jonathan J. Wierer Jr.

Gerd O. Mueller

Michael R. Krames

ABSTRACT OF THE DISCLOSURE

A III-nitride device includes a first n-type layer, a first p-type layer, and an active region separating the first p-type layer and the first n-type layer. The device may include a second n-type layer and a tunnel junction separating the first and second n-type layers. First and second contacts are electrically connected to the first and second n-type layers. The first and second contacts are formed from the same material, a material with a reflectivity to light emitted by the active region greater than 75%. The device may include a textured layer disposed between the second n-type layer and the second contact or formed on a surface of a growth substrate opposite the device layers.